### SAN FRANCISCO FORECAST DISTRICT.

During October this district was visited by four periods of rainy weather: 2d to 4th, 11th and 12th, 18th and 19th, and 27th and 28th. Ample warnings were issued of the approaching rains in each instance. The first rains occurred in the height of the fruit drying season, and the fact that little or no damage resulted is in a measure due to the timely warnings issued by the Weather Bureau.

Storm warnings were observed and no damage to shipping occurred.—*G. H. Willson, Local Forecast Official.*

### PORTLAND, OREG., FORECAST DISTRICT.

Comparatively settled weather prevailed in the north Pacific coast States until the morning of the 18th, when a storm was noted approaching Vancouver Island, which not only heralded the beginning of the rainy season, but also the advent of a series of southerly gales that continued almost uninterruptedly throughout the remainder of the month. Storm warnings were displayed and shipping in the different ports were kept fully advised regarding the force and character of the expected storms. With the exception of a maximum wind velocity of 53 miles an hour at Portland on the 19th, no winds of unusual severity were recorded at the Weather Bureau stations in this district. Press reports show, however, that the gales were unusually severe and that vessels exposed to them suffered considerable damage.—*E. A. Beals, Forecast Official.*

### HAVANA, CUBA, FORECAST DISTRICT.

No hurricane warnings were displayed during the month; nor were any necessary.—*W. B. Stockman, Forecast Official.*

### AREAS OF HIGH AND LOW PRESSURE.

*Highs.*—Of the eight highs, all but one, No. III, moved almost or entirely across the country, and all were above the thirty-fifth parallel. No. V described a somewhat erratic course after reaching central Ontario, dipping down to the North Carolina coast, and from thence turning northeastward along the coast to Cape Breton Island. The movements of the remainder were quite uniform, except that No. VIII, after reaching New Brunswick, and being reinforced by another high from Labrador, turned abruptly to the southward and was last noticed at the Island of Bermuda. No. III was a very moderate area, which moved up the Ohio Valley and disappeared in a single day.

From the 1st to the 5th the pressure was high on the middle Atlantic and New England coasts, and on the morning of the 5th another high appeared over the Gulf of St. Lawrence. It spread southward over New Brunswick and New England, causing general though mostly light rains, and continued to develop strength until the morning of the 7th, after which time it slowly dissipated as a low approached from the west.

*Lows.*—The movements of the fifteen lows were extremely erratic, and were remarkable for the fact that none was over the eastern half of the country south of Canada, except three of tropical origin, Nos. III, V, and X, that passed up the Atlantic coast. The majority originated either in the British Northwest or first appeared on the north Pacific coast. The paths, as a rule, were quite short, only three, Nos. II, VI, and XIV, moving across the country. When No. IX passed beyond the field of observation to the northward of Lake Superior it was the combination of three different sections that had originated, one in Alberta, one in western South Dakota, and the third in the Texas panhandle. The two latter sections merged into one in the middle Missouri Valley, to be joined two days later by the first section over northwestern Lake Superior. No. X was a tropical disturbance of moderate energy, which was first noted on the morning of the 23d over the southern portion of the Windward Islands. It moved very slowly northwestward to the Bahamas, and then recurved to the northeastward. It was finally noted while passing Bermuda. Another tropical disturbance, No. V, originated over southeastern Cuba, moved northwestward off the west Florida coast, and then turned northward along the coast to Maine, finally passing out beyond the Gulf of St. Lawrence. No. III was first observed at Bermuda; moved northwestward to the Massachusetts coast, and thence northeastward along the coast to Cape Breton Island. Nos. VII, VIII, XII, and XV originated on or near the north Pacific coast and dissipated in from twenty-four to thirty-six hours in the British Northwest.

There was a low, which was not charted, over the west Gulf of Mexico from the morning of the 4th to the evening of the 5th. It was evidently a tropical disturbance of minor character that moved in from the Caribbean Sea. There was also a stationary depression over the middle and northern Plateaus and Pacific coast from the morning of the 1st to the evening of the 4th, and another over the south Pacific coast and southern Plateau from the morning of the 9th to the morning of the 11th. During the 11th the latter moved to the middle California coast and disappeared.

There were lows over the British Northwest from the evening of the 10th to the evening of the 13th, and from the morning of the 23d to the morning of the 26th. The former began to move eastward during the night of the 13th, and is charted as No. VI.—*H. C. Frankenfield, Forecast Official.*

***Movements of centers of areas of high and low pressure.***

| Number. | First observed. | | | Last observed. | | | Path. | | Average velocities. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Date. | Lat. N. | Long. W. | Date. | Lat. N. | Long W. | Length. | Duration. | Daily. | Hourly. |
| High areas. | | ° | ° | | ° | ° | *Miles.* | *Days.* | *Miles.* | *Miles.* |
| I | 6, a.m. | 51 | 114 | 9, p.m. | 48 | 68 | 3,095 | 3.5 | 884 | 36.8 |
| II | 8, a.m. | 43 | 110 | 14, a.m. | 46 | 60 | 3,125 | 6.0 | 521 | 21.7 |
| III | 14, a.m. | 35 | 90 | 15, a.m. | 38 | 80 | 650 | 1.0 | 650 | 27.1 |
| IV | 14, p.m. | 51 | 114 | 18, a.m. | 38 | 80 | 1,825 | 3.5 | 521 | 21.7 |
| V | 17, a.m. | 53 | 109 | 24, a.m. | 46 | 60 | 3,425 | 7.0 | 489 | 20.4 |
| VI | 23, a.m. | 44 | 116 | 26, a.m. | 45 | 64 | 2,625 | 3.0 | 875 | 36.5 |
| VII | 23, p.m. | 41 | 124 | 28, p.m. | 46 | 60 | 3,625 | 5.0 | 725 | 30.2 |
| VIII | 26, a.m. | 46 | 123 | 2, p.m.† | 32 | 65 | 3,950 | 7.5 | 527 | 22.0 |
| Sums | | | | | | | 22,320 | 36.5 | 5,192 | 216.4 |
| Mean of 8 paths | | | | | | | 2,790 | | 649 | 27.0 |
| Mean of 36.5 days | | | | | | | | | 612 | 25.5 |
| Low areas. | | | | | | | | | | |
| I | 30, a.m.* | 44 | 116 | 2, a.m. | 41 | 96 | 1,100 | 2.0 | 550 | 22.9 |
| II | 4, p.m. | 45 | 123 | 8, a.m. | 49 | 68 | 2,825 | 3.5 | 807 | 33.6 |
| III | 10, a.m. | 32 | 65 | 11, p.m. | 46 | 60 | 1,350 | 1.5 | 900 | 37.8 |
| IV | 8, p.m. | 54 | 114 | 11, a.m. | 48 | 89 | 1,125 | 2.0 | 562 | 23.4 |
| V | 10, a.m. | 20 | 76 | 15, p.m. | 49 | 68 | 2,700 | 5.5 | 491 | 20.5 |
| VI | 14, a.m. | 45 | 110 | 18, a.m. | 48 | 54 | 2,900 | 4.0 | 725 | 30.2 |
| VII | 18, a.m. | 50 | 120 | 19, a.m. | 51 | 104 | 825 | 1.0 | 825 | 34.4 |
| VIII | 19, a.m. | 45 | 123 | 20, p.m. | 53 | 105 | 1,175 | 1.5 | 783 | 32.6 |
| IX | 20, a.m. | 44 | 103 | 23, a.m. | 48 | 89 | 1,175 | 3.0 | 392 | 16.3 |
| | 20, p.m. | 35 | 102 | | | | 1,250 | 2.5 | 500 | 20.8 |
| | 21, a.m. | 54 | 114 | | | | 1,400 | 2.0 | 700 | 29.2 |
| X | 23, a.m. | 15 | 62 | 30, a.m. | 32 | 65 | 2,150 | 7.0 | 307 | 12.8 |
| XI | 24, a.m. | 46 | 106 | 27, a.m. | 43 | 77 | 2,125 | 3.0 | 708 | 29.5 |
| XII | 27, a.m. | 49 | 123 | 28, a.m. | 54 | 114 | 550 | 1.0 | 550 | 22.9 |
| XIII | 27, a.m. | 44 | 103 | 28, p.m. | 48 | 87 | 1,050 | 1.5 | 700 | 29.2 |
| XIV | 28, p.m. | 38 | 114 | 3, a.m.† | 48 | 54 | 3,445 | 5.5 | 626 | 26.1 |
| XV | 30, a.m. | 49 | 123 | 31, p.m. | 53 | 108 | 720 | 1.5 | 480 | 20.0 |
| Sums | | | | | | | 27,865 | 48.0 | 10,606 | 442.2 |
| Mean of 17 paths | | | | | | | 1,639 | | 624 | 26.0 |
| Mean of 48 days | | | | | | | | | 580 | 24.2 |

*September. †November.